U.S. Army Center for Health Promotion and Preventive Medicine

USCHPPM

PRELIMINARY ASSESSMENT NO. 38-EH-7936-98
HOUSTON ORGANIZATIONAL MAINTENANCE SHOP 36
HOUSTON, TEXAS
3-6 MARCH 1998

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Readiness Thru Health

U.S. Army Center for Health Promotion and Preventive Medicine

The lineage of the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) can be traced back over 50 years. This organization began as the U.S. Army Industrial Hygiene Laboratory, established during the industrial buildup for World War II, under the direct supervision of the Army Surgeon General. Its original location was at the Johns Hopkins School of Hygiene and Public Health. Its mission was to conduct occupational health surveys and investigations within the Department of Defense's (DOD's) industrial production base. It was staffed with three personnel and had a limited annual operating budget of three thousand dollars.

Most recently, it became internationally known as the U.S. Army Environmental Hygiene Agency (AEHA). Its mission expanded to support worldwide preventive medicine programs of the Army, DOD, and other Federal agencies as directed by the Army Medical Command or the Office of The Surgeon General, through consultations, support services, investigations, on-site visits, and training.

On 1 August 1994, AEHA was redesignated the U.S. Army Center for Health Promotion and Preventive Medicine with a provisional status and a commanding general officer. On 1 October 1995, the nonprovisional status was approved with a mission of providing preventive medicine and health promotion leadership, direction, and services for America's Army.

The organization's quest has always been one of excellence and the provision of quality service. Today, its goal is to be an established world-class center of excellence for achieving and maintaining a fit, healthy, and ready force. To achieve that end, the CHPPM holds firmly to its values which are steeped in rich military heritage:

★ *Integrity is the foundation*
★ *Excellence is the standard*
★ *Customer satisfaction is the focus*
★ *Its people are the most valued resource*
★ *Continuous quality improvement is the pathway*

This organization stands on the threshold of even greater challenges and responsibilities. It has been reorganized and reengineered to support the Army of the future. The CHPPM now has three direct support activities located in Fort Meade, Maryland; Fort McPherson, Georgia; and Fitzsimons Army Medical Center, Aurora, Colorado; to provide responsive regional health promotion and preventive medicine support across the U.S. There are also two CHPPM overseas commands in Landstuhl, Germany and Camp Zama, Japan who contribute to the success of CHPPM's increasing global mission. As CHPPM moves into the 21st Century, new programs relating to fitness, health promotion, wellness, and disease surveillance are being added. As always, CHPPM stands firm in its commitment to Army readiness. It is an organization proud of its fine history, yet equally excited about its challenging future.

DEPARTMENT OF THE ARMY
U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MARYLAND 21010-5422

REPLY TO
ATTENTION OF

EXECUTIVE SUMMARY
PRELIMINARY ASSESSMENT NO. 38-EH-7936-98
HOUSTON ORGANIZATIONAL MAINTENANCE SHOP 36
HOUSTON, TEXAS
3-6 MARCH 1998

1. PURPOSE. The purpose of this Preliminary Assessment (PA) was to identify potential sources of environmental contamination at the Houston Organizational Maintenance Shop (OMS) 36 site in Houston, Texas, and to assess the immediate or potential threat that wastes at the site pose to human health and to the environment. Information gathered during the PA will be used to support a decision regarding the need for further environmental investigation of the site.

2. CONCLUSION. No potential sources expected to affect ground water, surface water, soil, or air quality were identified during this PA.

3. RECOMMENDATION. No further action is recommended.

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ABERDEEN PROVING GROUND, MARYLAND 21010-5422

REPLY TO ATTENTION OF
MCHB-TS-EGW

PRELIMINARY ASSESSMENT NO. 38-EH-7936-98
HOUSTON ORGANIZATIONAL MAINTENANCE SHOP 36
HOUSTON, TEXAS
3-6 MARCH 1998

1. INTRODUCTION.

a. References. See Appendix A for a list of references.

b. Authority.

(1) Memorandum, USACHPPM, MCHB-TS-EGW, 11 February 1998, subject: Notification of Site Visit for Preliminary Assessment (PA) at the Houston OMS 36, Houston, Texas.

(2) Telephone conversation between Mr. Barrett Borry, this Center, and Mr. Chris Prosser, National Guard Bureau, 5 February 1998, SAB.

(3) Telephone conversation between Mr. Barrett Borry and Dr. Paul Powell, Headquarters, Texas Army National Guard, 5 February 1998, SAB.

c. Purpose. This PA was conducted to identify potential sources of environmental contamination at the Houston OMS 36, Houston, Texas, and to assess the immediate or potential threat that wastes at the site pose to human health and to the environment. Information gathered during the PA will be used to support a decision regarding the need for further environmental investigation of the site.

d. Procedures. This PA was conducted by the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) during 3-6 March 1998. The scope of this investigation included a review of activities conducted by the Houston OMS 36 (OMS 36) during the time that OMS 36 occupied the property, from 1993 to the present, and the preceding time period from when the property was purchased by the Army Corps of Engineers around 1950. The property was vacant until from 1950 until 1993, and was farmland before that. The investigation was conducted through research and review of documentation, interviews with site workers, a comprehensive target and migration pathway survey, and offsite and onsite reconnaissance. No environmental samples were collected or analyzed during this survey. This survey was conducted in accordance with the U.S. Environmental

Protection Agency's Guidance for Performing Preliminary Assessments Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). A summary of this PA is provided in Appendix B.

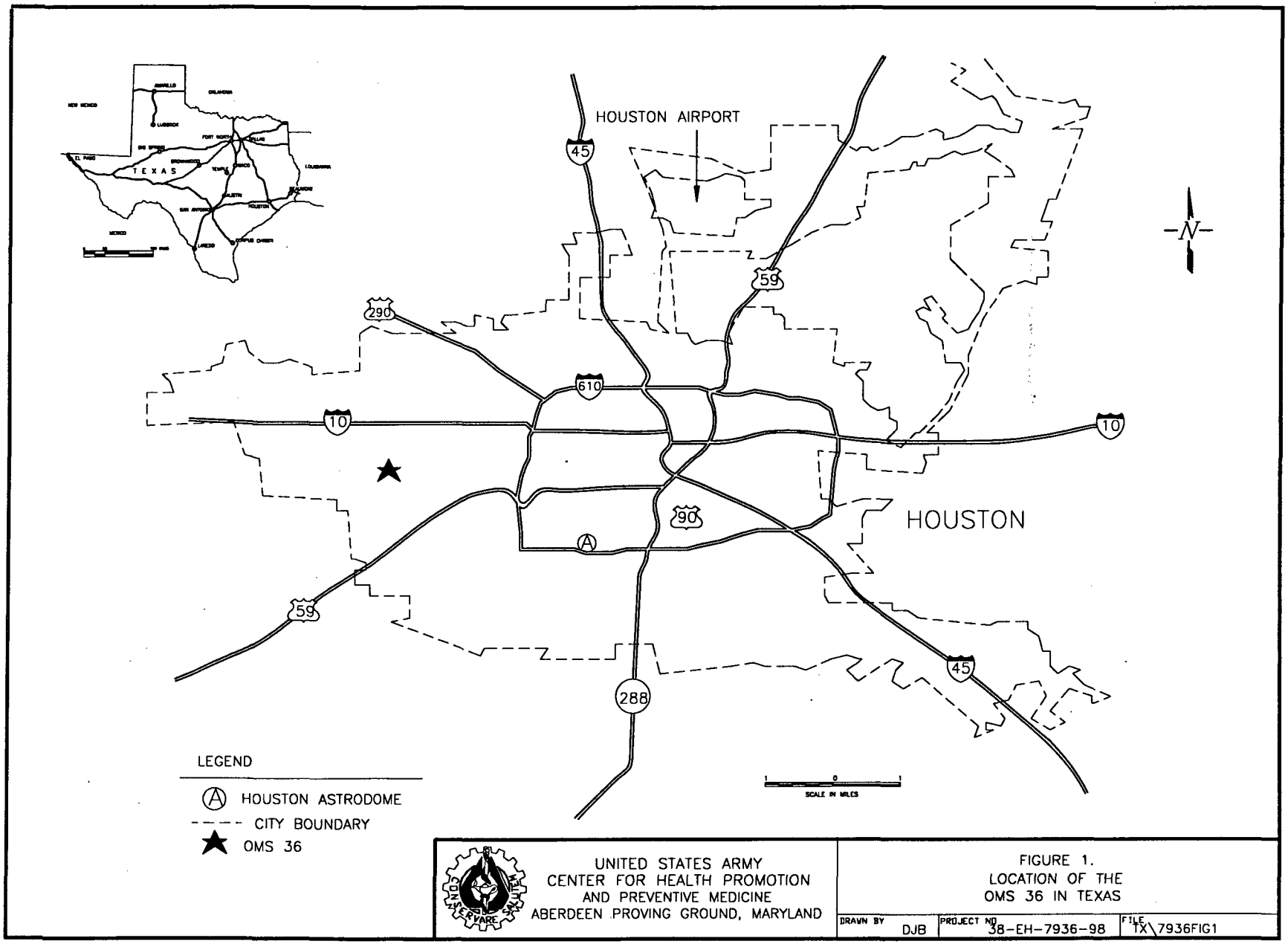
e. Project Personnel. This investigation was conducted by Mr. Barrett E. Borry, Project Manager, USACHPPM. Chief Warrant Officer Troy L. McQueen, the shop foreman for OMS 36 assisted Mr. Borry while at the OMS 36 site.

f. Personnel Contacted. A list of personnel contacted is provided in Appendix C.

2. SITE DESCRIPTION. The OMS 36 is located near the west central perimeter of the city of Houston at 15150 Westheimer Parkway, Houston, (Figure 1) in Harris County, Texas. The OMS 36 occupies 29.24 acres and is situated along the eastern side of the embankment for the Barker Reservoir. Geographic coordinates of the site are 29°44'10" latitude and 95°39'03" longitude.

a. Physiography, Vegetation, and Climate. The OMS 36 is located within the Texas Coastal Plain. The surrounding topography is essentially flat except for the nearby Barker Reservoir dam embankment. The OMS site elevation is about 90 feet above mean sea level (msl). Native vegetation for the area is tall grass prairie although the urban area is now vegetated by weeds or cultivated grass where it is not paved. The climate is humid, with a strong maritime influence. Winters are mild and summers are hot and humid. Temperatures generally range from average winter lows in the mid-40's (degrees F) to average summer highs in the low to mid-90's (degrees F). Annual precipitation for Houston averages about 49 inches per year. Rainfall is rather evenly distributed throughout the year. Two principal wind regimes dominate the Galveston-Houston area; persistent, southeasterly winds from March through November, and short-lived but strong northerly winds from December through February (reference 1).

b. Surrounding Land Use. The OMS 36 is situated essentially between the city of Houston and the Barker Reservoir. The Barker Reservoir is a U.S. Army Corps of Engineers (ACE) flood control reservoir. During non-flood conditions the area within the impoundment is a recreational area with facilities maintained by both the city and county governments. Approximately half of the surrounding land (8,000 acres) consists of the George Bush Park (formerly the Cullen-Barker Park) which is the recreational area within the Barker Reservoir. The remaining portion of the surrounding area consists of mostly light commercial and retail properties within the city of Houston. A public water supply well, West Houston #2, and associated water storage tank are located on adjoining property to the north. A compressed


HOUSTON AIRPORT
HOUSTON
TEXAS
45
59
290
610
10
90
288
N
LEGEND
HOUSTON ASTRODOME
CITY BOUNDARY
OMS 36
SCALE IN MILES
UNITED STATES ARMY
CENTER FOR HEALTH PROMOTION
AND PREVENTIVE MEDICINE
ABERDEEN PROVING GROUND, MARYLAND
FIGURE 1.
LOCATION OF THE
OMS 36 IN TEXAS
DRAWN BY DJB
PROJECT NO 38-EH-7936-98
FILE TX\7936FIG1

natural gas pipeline follows the eastern boundary of the property. The West Oaks Mall is located across Westheimer Road to the southeast. According to the U.S. Census Bureau, the total 1992 resident population of Harris County was 2,921,755.

c. Surface Water. Surface water features for the OMS 36 and surrounding area are shown on Figures 2 and 3. The site is bordered to the northwest by the Clodine Ditch which flows in a northerly direction along the outer base of the Barker Reservoir embankment. The Clodine Ditch discharges into the Buffalo Bayou where Buffalo Bayou discharges from the Barker Reservoir, approximately 2.5 miles to the north. The OMS 36 is situated outside the 500-year floodplain of Clodine Ditch (reference 2). Site drainage is collected by a series of shallow swales into a triangular-shaped catchment basin located in the northern part of the property. The catchment basin drains via corrugated steel pipes to the Clodine Ditch. These pipes are the point at which runoff from the site most likely enters surface water, or the probable point of entry (PPE). The 15-mile downstream flowpath is completed within Buffalo Bayou to the east. Flow characteristics of the Buffalo Bayou place it in the moderate to large stream category with a normal flow of about 300 cubic feet per second (cfs). However, the 15-mile downstream flowpath receives flood control discharges from both the Barker Reservoir and the Addicks Reservoir, so abnormal high flows can be as much as 5,000 cfs (reference 3). The PPE and 15-mile downstream flow path for the OMS 36 are shown on Figure 3.

d. Soils. A single soil type exists at the OMS 36 site, the Bernard clay loam. This is a nearly level soil with slopes that range from 0-1 percent but average less than 1 percent (reference 4). This soil is somewhat poorly drained. Surface runoff is very slow. Internal drainage and permeability are very slow. The available water capacity is high. In agricultural areas, the soil is used mainly for row crops, improved pasture, and native pasture.

e. Geology. The Coastal Zone of Texas is underlain by thousands of feet of mostly unconsolidated deposits of sand and clay. These sediments are Pleistocene aged (approximately 2 million years old) and consist of various fluvial, deltaic, and barrier strandplain sands which are moderately to highly permeable. These sands provide the reservoirs for the important aquifers in the region. The sediments have a very gentle dip, or slope, to the southeast towards the Gulf of Mexico. The Beaumont Formation, consisting of barrier-island and beach deposits, immediately underlies the OMS 36 site. This formation, in the vicinity of the OMS 36, consists of clayey sand and silt of moderate permeability and drainage (reference 5).

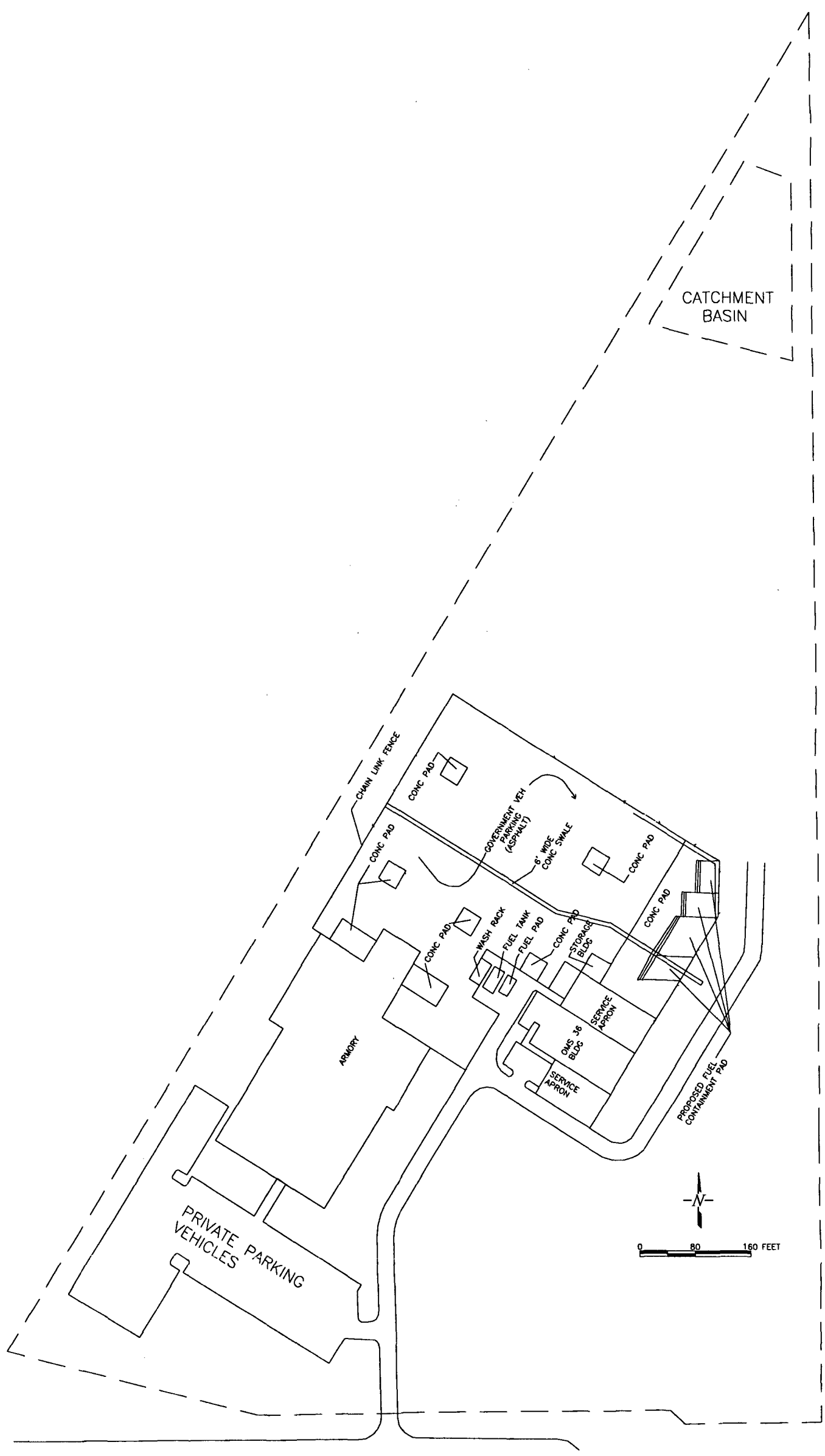


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FIGURE 2
GENERAL LAYOUT OF THE
OMS 36.

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DJB	38-EH-7936-97	TX\7936FIG2

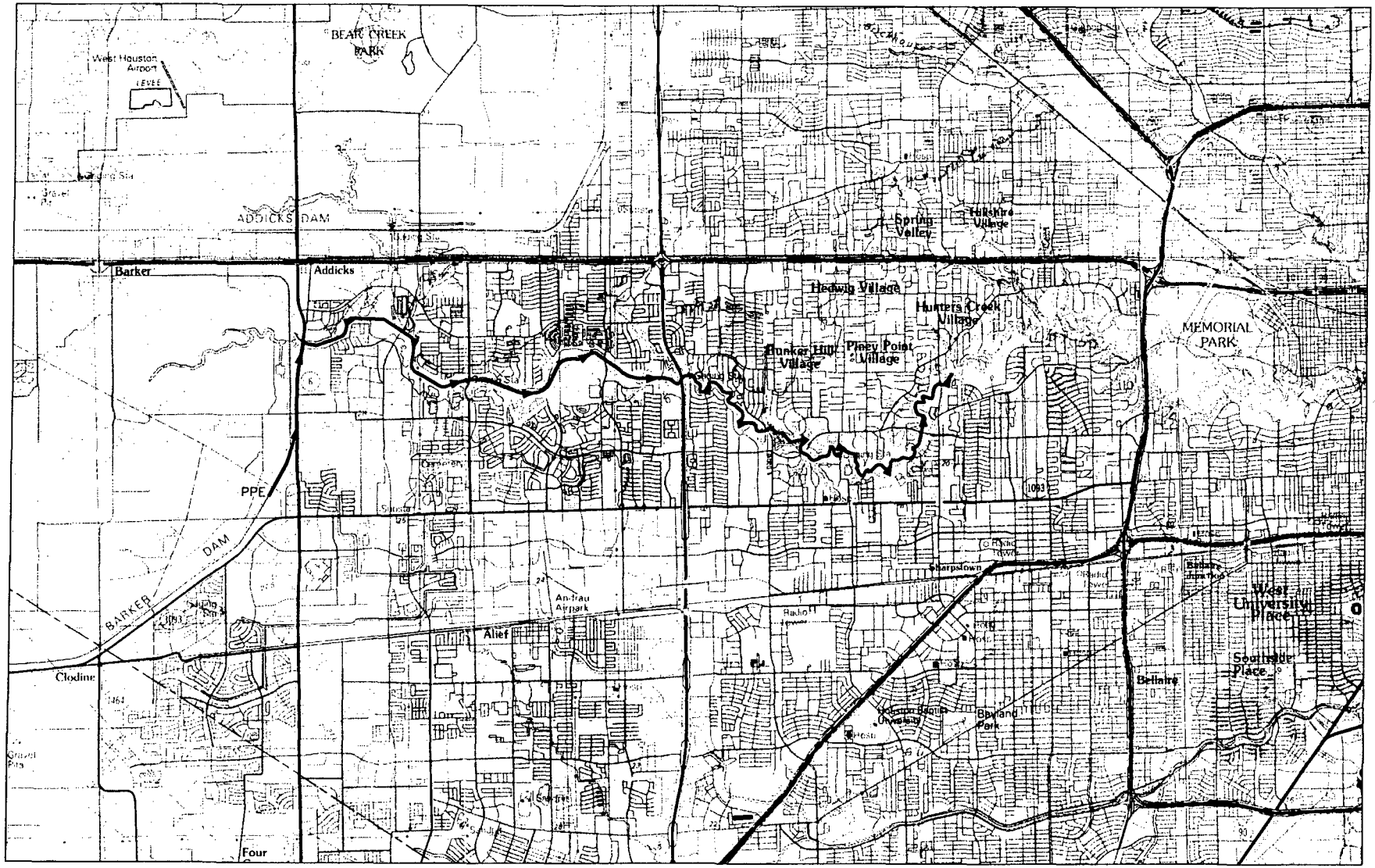

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FIGURE 3.
PPE AND 15-MILE DOWNSTREAM PATHWAY, OMS 36.

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f. Hydrogeology.

(1) The general hydrogeologic setting of the area is characterized by the following characteristics. The topography is relatively flat. The near surface sediments above the aquifer consist of clay, silt, and sand units that act as a semi-protective zone with respect to near-surface contamination. Ground water developed in the area is derived from vertical leakage that recharges from the land surface, compaction of clays, and depletion of artesian storage. The general direction of ground-water movement, before pumping began, was down-gradient toward the coast except in areas of heavy pumpage where cones of depression have occurred and the gradient is towards these pumpage centers (reference 6). Geologic stratigraphic units that contain fresh to slightly saline water are (from top down) the Beaumont formation, the Lissie, Willis, Goliad, and Fleming formations.

(2) Wells within 4 miles of the OMS 36 penetrate the Chicot and Evangeline aquifers. The Chicot aquifer corresponds to the Beaumont and Lissie formations, and the Evangeline aquifer encompasses the Willis formation and the upper Miocene Goliad formation. At the base of the Goliad formation is the Burkeville aquitard. The Chicot aquifer in this area is expected to have a thickness of less than 500 feet. The Evangeline aquifer thickness is less than 1,800 feet. The Burkeville aquitard has a thickness of several hundred feet. Most of the water wells within 4 miles of the site penetrate the Evangeline aquifer, although several of the shallower wells are screened within the Chicot aquifer.

g. Sensitive Environments.

(1) Endangered Species/Habitat. A single Federally-listed plant species, prairie dawn (Hymenoxys texana), is known to exist in the area. No other species of state or Federal concern are known to exist in the area (references 7, 8, and 9).

(2) Wetlands. A single potential wetland area exists within the in-water segment of the OMS 36, the catchment basin, within the north end of the property. That catchment basin, approximately 1 acre in size, is classified as "PUBFx", or Palustrine Unconsolidated Bottom Semi-permanently Flooded excavated (reference 2). This could meet the 40 CFR 230.3 definition of a wetland if emergent hydrophytes are present (reference 10) and should be evaluated by a wetlands expert if further investigation becomes necessary. Buffalo Bayou is incised for its portion of the 15-mile flowpath and none of the downstream pathway is fronted by wetlands.

(3) Fisheries. Buffalo Bayou provides a limited recreational fishery consisting primarily of "rough" fish, carp, and buffalo. It is unlikely, but not impossible, that these fish are harvested for human consumption (reference 3).

3. OPERATIONAL HISTORY AND WASTE CHARACTERISTICS.

a. General Site History and Current Operations. Property for the site of the present OMS 36 was initially part of the ACE Buffalo Bayou Flood Control Project and Barker Dam. Construction for the Barker Dam was completed in 1945. The 29-acre, triangularly-shaped site was transferred to the Texas Army National Guard (TXARNG) in 1987. Construction of the present facilities were completed in April 1993. Prior to 1987, the site was vacant. OMS 36 consists of a 10,000 square foot, seven-bay organizational maintenance shop building constructed with cement block and steel girder and containing a concrete floor. Associated with the OMS 36 is fuel and waste oil storage and a wash rack. Co-located on the property is the 60,000 square foot reserve center that houses the TXARNG headquarters for the 36th Brigade. Approximately 250 military vehicles are stored in the military vehicle parking lot to the rear, or north, of the buildings.

b. Regulatory Activities.

(1) Permits and Violations. No permits or violations are known to exist or to have existed for the OMS 36.

(2) Internal Inspections. An environmental compliance assessment survey (ECAS) was conducted on 4 October 1995 in response to a report of a possible oil sheen along the rear fence line north of the facility. Two environmental issues were noted during this visit (reference 11); evidence that petroleum, oil, and lubricant (POL) products were used along the north and east fence lines for weed control, and the application of pesticides by site personnel without proper certification. The possible oil sheen was attributed to past weed control efforts. Pesticide application by personnel without proper certification was discontinued. There has been no reported evidence of POL products used along the rear fence line since the October 1995 ECAS. No evidence of oil sheens or improper pesticide usage were observed during this PA.

(3) Reported Releases. There have been no reported releases for this site.

(4) Underground Storage Tanks. There are no underground storage tanks at this site.

(5) CERCLIS Registration. The OMS 36 does not have a CERCLIS registration. The site was listed in the Federal Agency Hazardous Waste Compliance Docket dated April 1995.

c. Site-Specific Operational History and Waste Characteristics Analysis. Generally, the facilities observed during this site visit were new and in excellent condition. There was no evidence of a release observed anywhere on the premises.

(1) Reserve Center Building. The Reserve Center building is located in the near-center of the property. This building serves to provide unit supply storage and administrative support. Thirty full-time personnel are employed here. The facilities support training exercises two to three weekends a month. According to site personnel, the Reserve Center contains an indoor firing range, but the range has never been used. No evidence of spills or contamination was observed inside or outside of the building.

(2) OMS 36 Shop Building. Organizational maintenance is performed at this shop building. Up to eight different units are supported which include authorized strength of over 400 personnel. Those units consist of several headquarters detachments, a fuel tanker company, and several signal companies. Vehicles for those units are parked in the rear of the OMS 36 building. Parts were washed with a parts cleaner that was serviced by a vender. A hot water detergent washer had recently been purchased but was not on-line at the time of this site visit. Oil filters were crushed in a oil filter crusher. During the field survey, the floors were clean with no cracks, stains, or evidence of spills. Floor drains in the bay areas discharged to the oil/water separator outside the front of the building. No evidence of improper prior or present hazardous waste disposal was detected during the survey.

(3) Vehicle Wash Rack and Oil/Water Separators. A wash rack and associated oil/water separator are located west of the shop building. An oil/water separator connected to the shop building floor drains was also located south of the shop building. The wash rack consisted of a concrete pad 20 x 35 feet in size, surrounded by curbing, and covered with a roof supported with girders. The wash rack was not being used at the time of this site visit because of leaks in the water lines to the wash rack. Both oil/water separators were connected to the local sewer system.

(4) Battery Service Area. A battery service area is located in the northwest corner of the OMS 36 shop building. This consists of an enclosed 10 x 25 foot room with a door to the outside paved area. There was no floor drain. At the time of this site visit, 25-30 batteries were observed in storage under a table along the wall.

(5) Military Vehicle Parking Area. The area to the rear or north of the OMS 36 shop and the Reserve Center building were used for motor vehicle parking. Nearly 250 vehicles are parked in the area. Types of vehicles include generator trailers, high mobility multi-wheeled vehicles (HMMWVs), 2 ½ ton trucks, 5 ton trucks and 1 ¼ ton pickups. A-Company of the 536th also maintains eleven 5,000-gallon fuel tankers. At the time of this site visit, these vehicles were parked along the southeastern side of the parking lot directly north of the OMS 36 shop building. No evidence of spillage was observed at the site, but there was no curbing to contain any spillage that could potentially occur from those vehicles. Construction of fuel containment pads was planned for later in 1998. The parking area has always been surrounded

by a secured, chain-link fence, and has always been paved with asphalt. A grassed area surrounded the perimeter of the pavement area along the outside of the fence. The pavement appeared to be in good condition, and no evidence of spills, staining, or distressed vegetation was present within the parking area or along the outside of the perimeter of the parking area.

(6) Hazardous Waste Storage Shed. Hazardous wastes were stored in an outdoor storage locker located to the rear or north of the OMS 36 shop building. The storage locker was approximately 8 x 10 feet in size and was observed to contain three drums of used antifreeze with over packs, and four drums of crushed oil filters. No evidence of spills, such as stains, odors, or distressed vegetation, were noted during the field survey.

(7) Fuel Storage. A single, 8,000-gallon capacity aboveground storage tank (AST) was located outside the OMS 36 shop building next to the wash rack. The tank was used to store JP-8. The tank was situated within a concrete berm to provide secondary containment.

(8) Waste oil storage. A 500-gallon AST was maintained along the northwest corner of the outside of the OMS 36 building. Secondary containment was provided by a concrete berm.

(9) Packaged POL Storage. Packaged POL which included 30-40, 5-gallon cans of motor oil, quart containers of motor oil, and antifreeze in 5-gallon and bulk 35-gallon plastic drums was stored in an enclosed room next to the battery storage room. The packaged POL room was also 10 x 25 feet in size.

(10) Solid Waste Storage. Solid waste was stored in three 2-cubic yard dumpsters. Collection occurred twice a week on Tuesdays and Thursdays.

(11) Transformers. There are no transformers at the OMS 36 site.

(12) Miscellaneous Storage. Various "cold unit" storage is maintained in a series of connexes located along the western perimeter of the site and in a 1,000-square foot storage shed located to the rear of the OMS 36 shop building.

4. GROUND-WATER PATHWAYS AND TARGETS.

a. General Ground-Water Pathway Analysis. If sufficient quantities of hazardous wastes were disposed of onto or buried beneath the ground surface, it is possible that shallow ground water would be affected. The shallow water could infiltrate to the Chicot or the Evangeline aquifers which are located within 200 feet of the ground surface.

b. General Ground-Water Target Analysis.

(1) The western portion of the city of Houston is served by public water supply wells in a blended system. Public water supply drinking water wells registered with the Texas Natural Resource Conservation Commission (TNRCC) and located within 4 miles of the OMS 36 site are shown in Figure 4 and listed in Appendix D. The nearest drinking water well is the city of Houston owned "West Houston No 2" public water supply well. The total depth of this well is 1,314 feet. Water levels are approximately 300 feet below the ground surface. The well is located on property that adjoins the northern boundary of the OMS 36 site. At least one wellhead protection area is located within the 4-mile radius along the northern perimeter of the Barker Reservoir (reference 6).

(2) Approximately 800,000 people are served by ground water in the city of Houston. There are 199 active public water supply wells for that population. No single well serves 40 percent of the population (reference 12). Assuming equal distribution among the 199 active wells, the population served by each individual well is 4020. Other information about populations served by the individual wells was obtained from TNRCC and is provided in Appendix D.

c. Site-Specific Ground-Water Pathways. No potential sources for ground-water contamination were identified during the PA.

5. SURFACE WATER PATHWAYS AND TARGETS.

a. General Surface Water Pathway and Target Analysis. If sufficient quantities of hazardous substances were released onto the ground surface, there is a potential for surface water to be affected. Surface water bodies greater than 2.5 miles downstream of the site are used as a minimal recreational fishery. No drinking water intakes were identified along the 15-mile downstream flowpath (reference 13).

b. Site-Specific Surface Water Pathways. No potential sources for surface water contamination were identified during the PA.

6. SOIL AND AIR EXPOSURE PATHWAYS AND TARGETS.

a. General Soil and Air Exposure Pathway and Target Analysis. There are 40 full-time workers at the OMS 36. The nearest school is located about 2 miles away from the site. The nearest residences are about 1,700 feet from the east perimeter of the OMS 36 property. No primary target day cares or schools were identified.

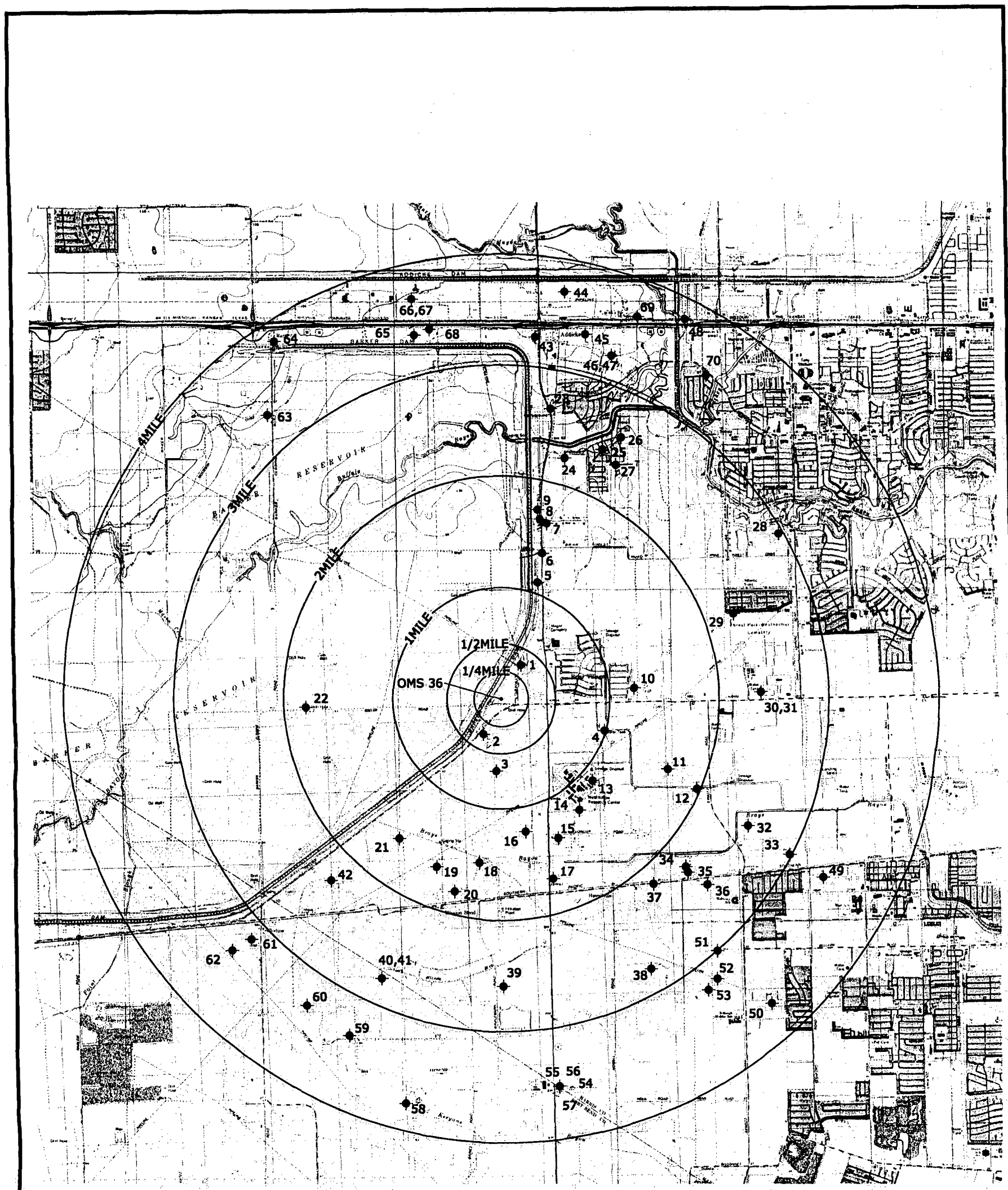

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FIGURE 4.
PUBLIC WATER SUPPLY WELLS REGISTERED WITH THE STATE OF TEXAS WITHIN 4 MILES OF THE OMS 36, HOUSTON, TX.

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b. Site-Specific Soil and Air Exposure Pathways. No potential soil or air exposure sources were identified during the PA.

7. CONCLUSION. No potential sources expected to affect ground water, surface water, soil, or air quality were identified during the PA. No further environmental investigations are necessary.

8. RECOMMENDATION. No further action is recommended.

for BARRETT E. BORRY, P.E.
Geohydrologist
Ground Water and Solid Waste Program

REVIEWED:

STEPHEN F. CURRAN, JR, P.G.
Team Leader
Restoration Team
Ground Water and Solid Waste Program

APPROVED:

JOHN W. BAUER, P.G.
Program Manager
Ground Water and Solid Waste

APPENDIX A

REFERENCES

1. White, W.A., Calnan, T.R., Morton, R.A., Kimble, R.S., Littleton, T.G., McGowem, J.H., Nance, H.S., and Schmedes, K.E. Submerged Lands of Texas, Galveston-Houston Area: Sediments, Geochemistry, Benthic Macroinvertebrates, and Associated Wetlands. Bureau of Economic Geology, The University of Texas at Austin, Austin, Texas, 1985.

2. Federal Emergency Management Agency Flood Insurance Rate Map, Harris County, Texas and Incorporated Areas. Community-Panel Number 48201C0810 J, Revised 6 November 1966.

3. Personal Communication with Mr. Richard K. Long, Park Manager, U.S. Army Corps of Engineers, Galveston District, Addicks Project Office, Houston, Texas.

4. Soil Survey of Harris County, Texas, United States Department of Agriculture Soil Conservation Service in cooperation with the Texas Agricultural Experiment Station and the Harris County Flood Control District.

5. Bureau of Economic Geology, The University of Texas at Austin, Austin, Texas. Geologic Atlas of Texas, Houston Sheet, 1982.

6. Cross, B.L., Terry, D.P., and Billings, V.R. City of Houston (A Public Water Supply Protection Strategy), Texas Water Commission, July 1991.

7. Personal Communication with Mr. Charles Fredieu, Deputy Assistant Director, Water Production Operations, City of Houston, Texas.

8. Biological Inventory of Addicks Reservoir Training Area, Draft Final Report, prepared for: Texas National Guard, prepared by Texas Natural Heritage Program, Resource Protection Division, Texas Parks and Wildlife Department, Austin, Texas, April 1994.

9. Biological Inventory of Barker Dam Drop Zone, Draft Final Report, prepared for: Texas National Guard, prepared by Texas Natural Heritage Program, Resource Protection Division, Texas Parks and Wildlife Department, Austin, Texas, April 1994.

10. United States Environmental Protection Agency, Office of Emergency and Remedial Response, Guidance for Performing Preliminary Assessments Under CERCLA, EPA/540/G-91/013, September 1991.

11. Memorandum, Adjutant General's Department, State of Texas, AGTX-EV, subject: Environmental Compliance Assessment System, 12 October 1995.

12. Personal Communication with Ms. Edith Erfling, U.S. Fish and Wildlife Service, Clear Lake, Texas.

13. Personal Communication, Ms. Beverly Halet, Drinking Water, City Engineer's Office, Houston, Texas.

APPENDIX B

PRELIMINARY ASSESSMENT SUMMARY FORM

1. General Site Information.

Name: Texas Army National Guard OMS 36
Address: 15150 Westheimer Parkway, Houston, TX 77082-1600
County: Harris
Congressional District:
Latitude/Longitude: 29°44'10" latitude/ 95°39'03" longitude
Approximate Area: 29 acres
Status of Site: Active

2. Owner/Operator Information.

Owner: 36th Brigade, Texas Army National Guard
Address:
Telephone:
Type of Ownership: Federal

Lessee/Operator: Same as above
Address:
Telephone:
Type of Lease:
How Initially Identified: N/A

3. Site Evaluator Information:

Name: Barrett E. Borry
Agency: U.S. Army Center for Health Promotion and Preventive Medicine
Date Prepared: Site survey conducted between 3-6 March 1998.
Address: USACHPPM, ATTN: MCHB-TS-EGW (Barrett Borry), 5158 Blackhawk Road, APG, MD 21010-5422
Telephone: (410) 671-5203

4. N/A

5. General Site Characteristics.

Predominant Land Uses within 1 Mile of Site (check all that apply):

	Industrial		Agriculture		DOI
x	Commercial		Mining	x	Other Federal Facility
x	Residential		DOD		Other
x	Forest/Fields		DOE		

Site Setting:	x	Urban	**Waste Generated:**	x	Onsite
		Suburban			Offsite
		Rural			Onsite and Offsite

Years of Operation: 1993-present

Type of Site Operations (check all that apply):

	Manufacturing (check subcategory)		Recycling
	Lumber/wood products		Junk/salvage yard
	Inorganic Chemicals		Municipal Landfill
	Plastic and/or rubber products		Other landfill
	Paints/varnishes	x	DOD
	Industrial organic chemicals		DOE
	Agricultural chemicals		DOI
	Miscellaneous chemical products		Other Federal facility
	Primary metals		RCRA
	Metal coating, plating, engraving		Treatment, storage, disposal
	Metal forging, stamping		Large quantity generator
	Fabricated structural metal products		Small quantity generator
	Electronic equipment		Subtitle D
	Other manufacturing		Municipal
	Mining		Industrial
	Metals		Converter
	Coal		Protective filer
	Oil and Gas		Non- or late filer
	Non-metallic minerals		Not specified
	Retail		Other

Waste Deposition Authorized By:

- Present Owner
- Former Owner
- Present & Former Owner
- x Unauthorized
- Unknown

Waste Accessible to the Public: Yes / x No

Distance to Nearest Dwelling, School or Workplace: 200 feet

6. Waste Characteristics Information:

Source Type	Source Waste Quantity	Tier*
Landfill	n/a	
Source Impoundment	n/a	
Drums	n/a	
Tanks/Non-Drum Containers	2 oil/water separators, one 500-gal AST for waste oil	
Chemical Waste Pile	n/a	
Scrap Metal/Junk Pile	n/a	
Tailings Pile	n/a	
Trash Pile (open dump)	n/a	
Land Treatment	n/a	
Contaminated Ground-Water Plume (unidentified source)	n/a	
Contaminated Surface Water/ Sediment (unidentified source)	n/a	
Contaminated Soil	n/a	
Other Sources	n/a	
No Sources		

*C=Constituent, W=Waste stream, V=Volume, A=Area

General Types of Waste (check all that apply):

	Metals		Pesticides/herbicides
	Organics		Acids/bases
	Inorganics	x	Oily waste
	Solvents		Municipal waste
	Paints/pigments		Mining waste
	Laboratory/hospital waste		Explosives
	Radioactive waste		Other
	Construction/demolition waste		

Physical State of Waste as Deposited (check all that apply):

	Solid		Sludge	Powder
x	Liquid		Gas	

7. Ground Water Pathway.

Is ground water used for drinking water within 4 miles? Yes

Type of drinking water wells within 4 miles (check all that apply):

x	Municipal
	Private
	None

Depth to shallowest aquifer: less than 200 feet

Karst terrain/aquifer present: No

Is there a suspected release to ground water? No

Have Primary Target drinking water wells been identified? No

If yes, enter primary target population:

Nearest designated wellhead protection area:

	Underlies site
x	0-4 miles
	None within 4 miles

8. Surface Water Pathway.

Type of surface water draining site and 15 miles downstream (check all that apply):

x	**Stream**	**River**	**Pond**
	Lake	**Bay**	**Ocean**
	Other		

Shortest overland distance from any source to surface water: 200 feet

Is there a suspected release to surface water? No

Site is located in:

	Annual - 10 year floodplain
	>10 year to 100 year floodplain
	>100 year to 500 year floodplain
x	**>500 year floodplain**

Are there drinking water intakes located along the surface water migration path? No

Have primary target drinking water intakes been identified? No

If yes, enter population served by primary target intakes:

List all secondary target drinking water intakes:

Name	Water Body	Flow (mgd)	Apportioned Population Served

Total Population served by drinking water intakes within 15 miles: 0

Are there fisheries located along the surface water migration path? Yes

Have primary target fisheries been identified? No.

List all secondary target fisheries:

Water Body/Fishery Name	Flow (cfs)
Minimal recreational fishery starting at 2.5 miles downstream of PPE in Buffalo Bayou.	300

Are wetlands located along the surface water migration path? No.

Have primary target wetlands been identified?

List secondary target wetlands:

Water Body	Flow (cfs)	Frontage Miles
		None

Are other sensitive environments located along the surface water migration path? No

Have primary target sensitive environments been identified? No

List secondary target sensitive environments:

Water Body	Flow (cfs)	Sensitive Environment Type

9. Soil Exposure Pathway.

Are people occupying residences or attending school or daycare on or within 200 feet of areas of known or suspected contamination? No

If yes, enter total resident population:

Number of workers onsite:

	None
x	**1 - 100**
	101 - 1,000
	>1,000

Have terrestrial sensitive environments been identified on or within 200 feet of areas of known or suspected contamination? No

If yes, list each terrestrial sensitive environment:

10. Air Pathway.

Is there a suspected release to air? No.

Enter total population on or within:

Distance Category	Total Population
Onsite	40 workers
0 - 1/4 mile	0
> 1/4 to ½ mile	0
> ½ to 1 mile	2,198
> 1 to 2 miles	13,820
> 2 to 3 miles	33,027
> 3 to 4 miles	54,744
0 to 4 miles	103,789

Are there wetlands located within 4 miles of the site? Yes

Are there other sensitive environments located within 4 miles of the site? No

List all sensitive environments located within ½ mile of the site:

Distance Category	Sensitive Environment Type/Wetlands Area (in acres)
Onsite	Potential wetlands (1 acre)
0-1/4 mile	Potential wetlands (9 acres)
1/4 - ½ mile	30 acres wetlands

APPENDIX C

LIST OF PERSONNEL CONTACTED

List of Personnel Contacted
(in alphabetical order)

1. Mr. Shakeel Ahmad, P.E., Environmental Engineer, Adjutant General's Department, Texas Army National Guard, Camp Mabry, Texas.

2. LTC James K. Brown, OIC 36th Brigade, Facilities Manager, OMS 36, Houston, Texas.

3. Mr. Thomas W. Brown, Jr., Texas Natural Resources Information System, Austin, Texas.

4. Ms. Edith Erfling, U.S. Fish and Wildlife Service, Clear Lake, Texas.

5. Mr. Charles Fredieu, Deputy Assistant Director, Water Production Operations, city of Houston, Texas.

6. SFC Donald Greer, Automotive Worker, OMS 36, Houston, Texas.

7. Ms. Beverly Halet, Drinking Water, City Engineer's Office, Houston, Texas.

8. Mr. Richard K. Long, Park Manager, U.S. Army Corps of Engineers, Galveston District, Addicks Project Office, Houston, Texas.

9. CWO Troy L. McQueen, Shop Foreman, OMS 36, Houston, Texas.

10. Dr. Paul Powell, Environmental Specialist, Adjutant General's Department, Texas Army National Guard, Camp Mabry, Texas.

11. Mr. Reggie C. Williams, Engineering Technician, Water Information Network, Texas Water Development Board, Austin, Texas.

APPENDIX D

PUBLIC WATER SUPPLY WELLS REGISTERED WITH THE STATE OF TEXAS WITHIN 4 MILES OF THE OMS 36, HOUSTON, TEXAS

Well ID	Distance (miles)	Owner	Aquifer	Well Use	Depth (ft)	Population Served
1	0	West Houston #2 (City of Houston)	Evangeline	Public Supply	1314	4020
2	1/4-1/2	West Houston #1 (City of Houston)	Chicot and Evangeline	Public Supply	800	4020
3	½-1	West Houston #3 (City of Houston)	Evangeline	Public Supply	1420	4020
4	½-1	District 95 (City of Houston)	Evangeline	Public Supply	1066	4020
5	1-2	Paul's Seafood	Chicot	Public Supply	300	200
6	1-2	Chevron Self Serve	unknown	Public Supply		300
7	1-2	CBS Engineering	Chicot	Public Supply	353	100
8	1-2	Diamond Shamrock		Public Supply		unknown
9	1-2	Sandbridge	Evangeline	Public Supply	1190	unknown
10	1-2	Westheimer MUD (City of Houston)	Evangeline	Public Supply	1190	4020
11	1-2	West HCO MUD #6	Evangeline	Public Supply	1248	3348
12	1-2	Rosewood 2 (City of Houston)	Evangeline	Public Supply	1288	4020
13	1-2	Shell Dev Co	Evangeline	Public Supply	1295	600
14	1-2	Shell Dev Co	Evangeline	Public Supply	1295	600
15	1-2	Molinas Mexican Cafe				175
16	1-2	Molinas Mexican Cafe				
17	1-2	Addicks-Alief Med Center	Chicot	Public Supply	285	200
18	1-2	HCO MUD No 120 Greencrest	Evangeline	Public Supply	1300	1950
19	1-2	HCO MUD No 120 West Park	Evangeline	Public Supply	1600	1959
20	1-2	Chelford One MUD	Evangeline	Public Supply	1250	8418
21	1-2	HCO MUD 147	Evangeline	Public Supply	1248	2208
22	1-2	HCO Park Sys-Cullen/Barker Park				100
23	2-3	Houston Campground	Chicot	Public Supply	220	90
24	2-3	1	Evangeline	Public Supply	1310	unknown
25	2-3	Sandbridge	Evangeline	Public Supply	1316	unknown

Well ID	Distance (miles)	Owner	Aquifer	Well Use	Depth (ft)	Population Served
26	2-3	Fleetwood-MUD10 (City of Houston)	Evangeline	Public Supply	1099	4020
27	2-3	Unknown				
28	2-3	2-Forkland/encl	Evangeline	Public Supply	1300	unknown
29	2-3	1-Westella	Evangeline	Public Supply	1175	unknown
30	2-3	Rosewood 1 #1 (City of Houston)	Evangeline	Public Supply	1300	4020
31	2-3	Rosewood 1 #2 (City of Houston)	Evangeline	Public Supply	1340	4020
32	2-3	Dist 218 #2 (City of Houston)	Evangeline	Public Supply	1122	4020
33	2-3	Dist 218 #1 (City of Houston)	Evangeline	Public Supply	1610	4020
34	2-3	1	Evangeline	Public Supply	1200	unknown
35	2-3	1	Evangeline	Public Supply	1200	unknown
36	2-3	Dist 158 #2 (City of Houston)	Evangeline	Public Supply	1385	4020
37	2-3	Mission Bend MUD No 2 Well #1	Evangeline	Public Supply	1530	3700
38	2-3	Mission Bend MUD No 2 Well #2	Evangeline	Public Supply	1372	3677
39	2-3	Mission Bend MUD No 2 Well #1 Alcomita	Evangeline	Public Supply	824	2740
40	2-3	Chelford City MUD #1	Evangeline	Public Supply	1344	4209
41	2-3	Chelford City MUD #2	Evangeline	Public Supply	850	4209
42	2-3	West HCO MUD No4 - Kensley	Evangeline	Public Supply	1205	831
43	3-4	Chevron Self Serve No 154469				200
44	3-4	Kingsland Estates Water Supply Cor	Chicot	Public Supply	350	42
45	3-4	Dist 21 (City of Houston)	Evangeline	Public Supply	1170	4020
46	3-4	Barkers Landing (City of Houston)	Evangeline	Public Supply	716	4020
47	3-4	Barkers Landing (City of Houston)	Evangeline	Public Supply	995	4020

Well ID	Distance (miles)	Owner	Aquifer	Well Use	Depth (ft)	Population Served
48	3-4	Katy Addicks #6 (City of Houston)	Evangeline	Public Supply	1165	4020
49	3-4	HCO PK SYS-Alief Amity PK-PCT 3	Chicot	Public Supply	264	100
50	3-4	Bellaire Braes 5 (City of Houston)	Evangeline	Public Supply	1600	4020
51	3-4	Dist 158 #3 (City of Houston)	Evangeline	Public Supply	1320	4020
52	3-4	Dist 158 #1 (City of Houston)	Evangeline	Public Supply	1394	4020
53	3-4	West Oaks (City of Houston)	Evangeline	Public Supply	1610	4020
54	3-4	Laterna Lane MHP	Chicot	Public Supply	440	330
55	3-4	Laterna Village Subdivision #1	Chicot	Public Supply	230	100
56	3-4	Laterna Village Subdivision #2	Chicot	Public Supply	300	100
57	3-4	Laterna Village Subdivision #3	Chicot	Public Supply	320	100
58	3-4	N Mission Glen MUD	Evangeline	Public Supply	1200	3120
59	3-4	Mission Bend MUD No 1 #2 Lobera	Evangeline	Public Supply	1105	2747
60	3-4	Ft Bend Co MUD No 30	Evangeline	Public Supply	1452	2943
61	3-4	Clodine Country Store	Chicot	Public Supply	380	50
62	3-4	Big Oaks MUD Emily Ct	Chicot	Public Supply	730	543
63	3-4	Longhorn Town MUD	Evangeline	Public Supply	1395	603
64	3-4	HCO MUD No 216	Chicot	Public Supply	480	200
65	3-4	Mem W MUD 2 #2 (City of Houston)	Evangeline	Public Supply	1288	4020
66	3-4	Park Ten MUD 1-1300 Langham	Evangeline	Public Supply	1650	708
67	3-4	Park Ten MUD 2-1300 Langham	Evangeline	Public Supply	1641	708
68	3-4	Q-Ratio Texas Inc	Chicot	Public Supply	567	100
69	3-4	Pro Shot Inc	Chicot	Public Supply		unknown
70	3-4	Turkey Creek #1	Evangeline	Public Supply	1210	4020

APPENDIX E

PHOTOGRAPHIC LOG

View of OMS 36 Site facing northeast. Clodine Ditch and Barker Reservoir embankment on left. West Houston #2 water tank in left rear.

8000-gal Fuel Storage AST (right) and Wash Rack.

500-gal Waste Oil AST

Rear or Northern Perimeter Fence of Military Vehicle Parking Lot